

(12) UK Patent Application (19) GB (11) 2 349 493 (13) A

(43) Date of A Publication 01.11.2000

(21) Application No 9909963.2

(22) Date of Filing 29.04.1999

(71) Applicant(s)

**Mitsubishi Electric Information Technology Centre
Europe B.V.
(Incorporated in the Netherlands)
20 Frederick Sanger Road, The Surrey Research Park,
GUILDFORD, Surrey, GU2 5YD, United Kingdom**

(72) Inventor(s)

Mirosław Bober

(74) Agent and/or Address for Service

**R G C Jenkins & Co
26 Caxton Street, LONDON, SW1H 0RJ,
United Kingdom**

(51) INT CL⁷

G06K 9/36

(52) UK CL (Edition R)

**G4R RPX R1X
U1S S1820 S2217**

(56) Documents Cited

GB 2085629 A GB 1537322 A GB 1403765 A

(58) Field of Search

UK CL (Edition Q) G4R REX RPF RPX RRL RRM

INT CL⁶ G06K 9/00 9/36 9/46 9/52 9/54 9/60 9/62 9/64

9/66 9/68 9/78 9/80 17/00

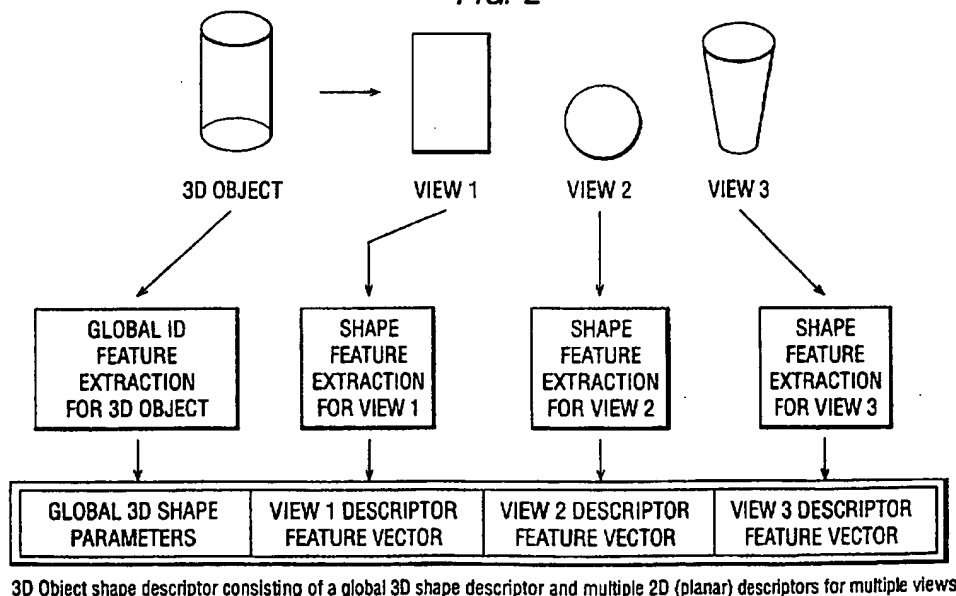
Online:WPI, EPODOC

(54) Abstract Title

Representing and searching for an object using shape

(57) A method of representing an object appearing in a still or video image for use in searching, wherein the object appears in the image with a first two-dimensional outline comprises deriving a view descriptor of the first outline of the object and deriving at least one additional view descriptor of the outline of the object in a different view, and associating the two or more view descriptors to form an object descriptor. A global parameter, such as the volume of the object, may also be derived.

FIG. 2



At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

This print incorporates corrections made under Section 117(1) of the Patents Act 1977.

GB 2 349 493 A

BEST AVAILABLE COPY

Method and Apparatus for Representing and Searching for an ObjectUsing Shape

The present invention relates to a method and apparatus for representing
5 an object in a still or video image using shape, especially for use in searching.
The invention also relates to a method and apparatus for searching for an object
in a image using a shape representation.

It is known to store still or video images, for example in image libraries,
using representations of objects appearing in images. The representations are
10 used in searching methods to enable images containing objects of interest to be
retrieved. The representations may be based on various features of the objects,
including colour, texture and shape.

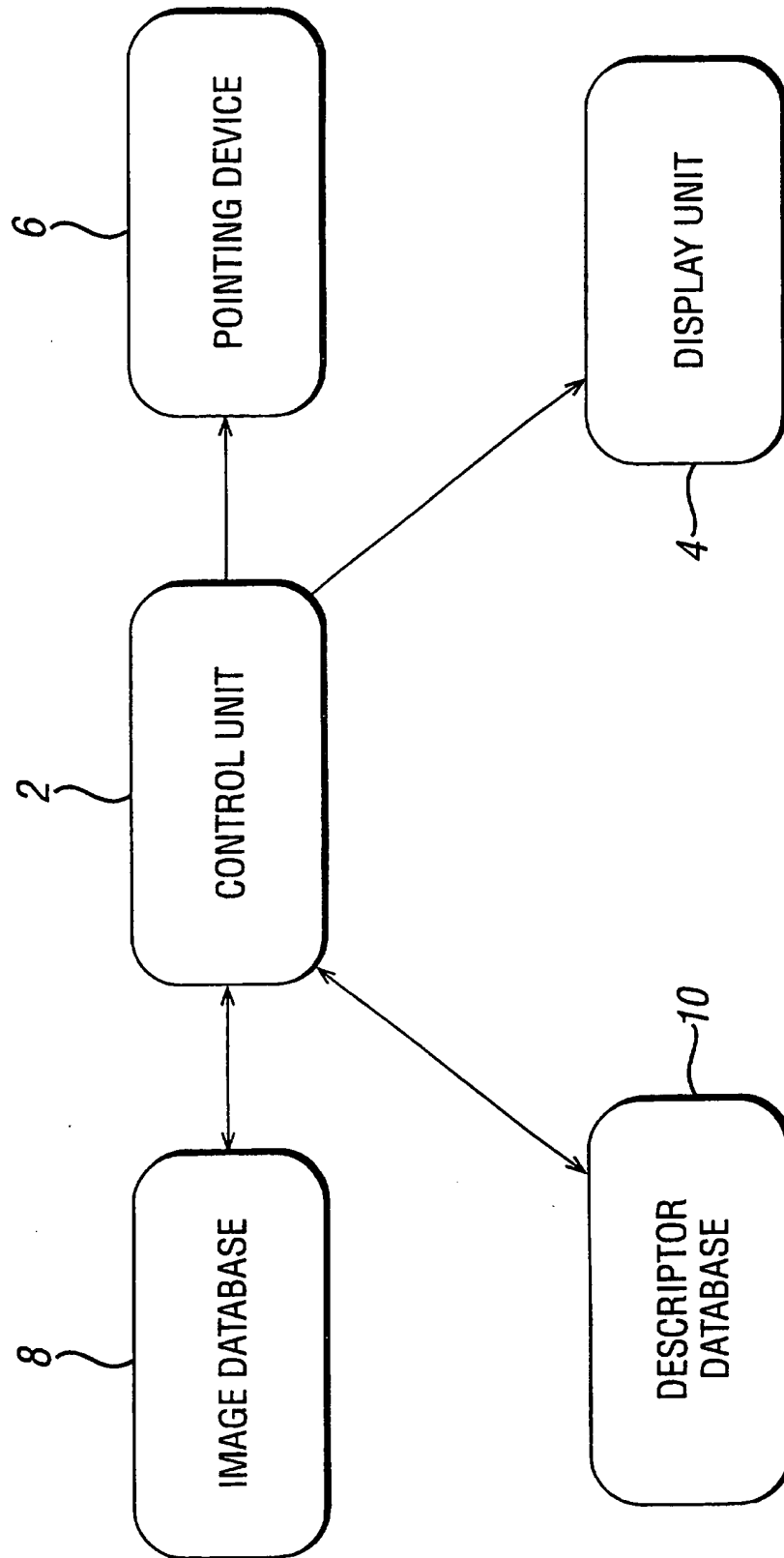
Various methods for representing shapes of objects in images are
known. Known methods include chain coding, the quad-tree method and the
15 curvature scale space representation method.

To perform a search in a image searching system, a user inputs a query
by presenting the system with a sketch or image of the object sought, or by
selecting a view of an object stored on the system. The system then derives or
obtains a representation of the query object and compares the query
20 representation with the representations of images stored in the database using
an appropriate matching method. The closest matches are displayed on a
display unit.

Claims

1. A method of representing an object appearing in a still or video image, wherein the object appears in the image with a first two-dimensional outline, by processing signals corresponding to the image, the method comprising deriving a view descriptor of the first outline of the object and deriving at least one additional view descriptor of the outline of the object in a different view, and associating the two or more view descriptors to form an object descriptor.
10
2. A method as claimed in claim 1 wherein the view descriptors are derived using a curvature scale space representation.
3. A method as claimed in claim 1 or claim 2 further comprising
15 deriving a descriptor of the object which is related to the shape and/or size of the object and which is independent of the view of the object in the image.
4. A method of representing an object appearing in a still or video image comprising deriving a descriptor which is related to the shape and/or size
20 of the object and which is independent of the view of the object in the image.

FIG. 1



1/5